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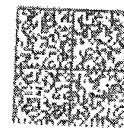
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/713,425	11/15/2000	Leonard Presta	P1726R1P1	3384
7590 06/10/2004			EXAMINER	
Wendy M Lee 1 DNA Way South San Francisco, CA 94080-4990			SAUNDERS, DAVID A	
			ART UNIT	PAPER NUMBER
			1644	
DATE MAILED: 06/10/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

713,425

Applicant(s)

PRESTA

Examiner

SAUNDERS

Group Art Unit

1644

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 3/29/04
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 60-63, 80-82 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 60-63, 80-82 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

Art Unit: 1644

The amendment received 3/29/04 has been entered. Claims 60-63 and 80-82 are pending and under examination.

The disclosure is objected to because of the following informalities: at page 1, line 10 the current status of application 09/483, 588 must be indicated.

Appropriate correction is required.

The amendment has overcome 112 and obviousness type double patenting rejections of record.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 60-63 and 80-82 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

While applicant has disclosed that noncovalent complexes of the variant polypeptide and the Fc. gamma. R allotypic receptor would occur in vivo, upon administration of the variant polypeptide to a subject, and while applicant has formed such noncovalent complexes in examples directed to evaluating the binding affinity of the polypeptide for the receptor, applicant has disclosed no utility for such noncovalent complexes. These are only a transiently existing complex formed in vivo, after administration of the variant polypeptides of the invention to a subject. These complexes cannot be provided in a vial and then administered to a patient. What would one do with such complexes? There is no well-established utility for these; indeed, it is conventional in the art for one to draw patent claims to a new drug but not to draw

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claims to a new drug complexed with what would be its in vivo receptor, or other site of action (e.g. an enzyme). For example it is not well-established for one to claim a composition of a new beta one blocker and the beta one receptor. For one to claim an old drug complexed with its in vivo receptor, might overcome art but does not establish patentable subject matter.

Claims 60-63 and 80-82 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Prior art rejections are maintained as follows:

Claims 60-63 and 80-82 are rejected under 35 U.S.C. 102(b) or (e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Indusogie et al (WO 99/51642 or US⁶_A 242, 195).

See further below.

Claims 60-63 and 80-82 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Idusogie et al (6,528,624).

The Idusogie et al references were previously cited (action of 5/5/03) for teaching mutant/variant forms of IgG1 which inherently have the property of increased binding affinity for an Fc. gamma. R allotype.—e.g. the K334A mutant having increased binding affinity for the Fc. gamma. RIIIA-V158 receptor. Applicant considers that the amended and new claims distinguish over the references, because none of these teach anything about binding to Fc. gamma. R allotypes.

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It must, however, also be noted that applicant has urged (amendment at page 4) that the complex may occur with in vivo use, as taught at specification page 60, lines 1 and 4; also, it must be noted that Idusogie et al teach in vivo use throughout their disclosures. Therefore, it would have been inherent that the instantly claimed complexes would have been formed when IgG1 antibodies having the taught mutant forms were administered to patients having allotypic Fc. gamma. R receptors (which are present, by nature, in a portion of any patient population); as far as the examiner can determine from the disclosures of Idusogie et al and applicant, there is nothing different about the formulations, dosages, and routes/schedules of administration that would not have inherently resulted in binding of the IgG1 antibodies of Idusogie et al to such allotypic receptors.

The rejection has been alternatively stated under obviousness. In the event that any exemplified patients or contemplated patients of Idusogie et al did not have allotypic Fc. gamma. R receptors, it is taken as obvious that, with a large enough pool of patients, there would be those who, by nature, possessed allotypic Fc receptors.

Applicant's arguments filed 3/29/04 have been fully considered but they are not persuasive. For the above reasons.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Saunders, PhD whose telephone number is 571-272-0849. The examiner can normally be reached on Monday-Thursday from 8:00a.m to 5:30p.m. The examiner can also be reached on alternate Fridays

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan, can be reached on 571-272-0841. The fax phone number for the organization where this application or proceeding is assigned is 571-273-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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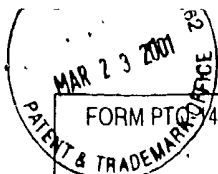
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you have questions on access to the Private PAIR system, contact the Electronic
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Saunders/tgd

June 9, 2004

David A. Saunders
DAVID SAUNDERS
PRIMARY EXAMINER
ART UNIT 162-1644



applicant is
Sheet 1 of 1

FORM PTOL 449

U.S. Dept. of Commerce
Patent and Trademark Office

Atty Docket No.
P1726R1P1

Serial No.
09/713,425

LIST OF DISCLOSURES CITED BY APPLICANT

(Use several sheets if necessary)

Applicant
Presta, L.

Filing Date

15 Nov 2000

Class

1600

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number	Date	Name	Class	Subclass	Filing Date
DGL	1 4,752,601	21.06.88	Hahn	—	—	—
	2 5,348,876	20.09.94	Michaelsen et al.	—	—	—
	3 5,624,821	29.04.97	Winter et al.	—	—	—
	4 5,648,260	15.07.97	Winter et al.	—	—	—
	5 5,698,449	15.12.97	Baumann et al.	—	—	—
	6 5,736,137	07.04.98	Anderson et al.	—	—	—
	7 5,935,599	16.11.99	McKenzie et al.	—	—	—
	8 6,194,551 B1	27.02.01	Idusogie et al.	—	—	—

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number	Date	Country	Class	Subclass	Translation Yes	Translation No
DGL	9 WO 60/09560	24.02.00	PCT	—	—	—	—
	10 WO 88/07089	22.09.88	PCT	—	—	—	—
	11 WO 94/29351	22.12.94	PCT	—	—	—	—
	12 WO 97/28267	07.08.97	PCT	—	—	—	—
	13 WO 97/44362	27.11.97	PCT	—	—	—	—
	14 WO 98/23289	04.06.98	PCT	—	—	—	—
	15 WO 98/52975	26.11.98	PCT	—	—	—	—
	16 WO 99/43713	02.09.99	PCT	—	—	—	—
	17 WO 99/51642	14.10.99	PCT	—	—	—	—
	18 WO 99/58572	18.11.99	PCT	—	—	—	—

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

DGL	19	Allan and Isliker, "Studies on the complement-binding site of rabbit immunoglobulin G-I. Modification of tryptophan residues and their role in anticomplementary activity of rabbit IgG" <u>Immunochimistry</u> 11(4):175-180 (Apr 1974)
	20	Anga et al., "A single amino acid substitution abolishes the heterogeneity of chimeric mouse/human (IgG4) antibody" <u>Molecular Immunology</u> 30(1):105-108 (Jan 1993)
	21	Armour et al., "Recombinant human IgG molecules lacking Fcγ receptor I binding and monocyte triggering activities" <u>European Journal of Immunology</u> 29(8):2613-2624 (Aug 1999)
	22	Bloom et al., "Intrachain disulfide bond in the core hinge region of human IgG4" <u>Protein Science</u> 6:407-415 (1997)
	23	Bolland et al., "SHIP modulates immune receptor responses by regulating membrane association of Btk" <u>Immunity</u> 8(4):509-516 (Apr 1998)
	24	Bredius et al., "Role of neutrophil FcγRIIa (CD32) and FcγRIIb (CD16) polymorphic forms in phagocytosis of human IgG1- and IgG3-opsonized bacteria and erythrocytes" <u>Immunology</u> 83(4):624-630 (Dec 1994)
	25	Brekke et al., "Human IgG isotype-specific amino acid residues affecting complement-mediated cell lysis and phagocytosis" <u>European Journal of Immunology</u> 24(10):2542-2547 (Oct 1994)
	26	Burmeister et al., "Crystal structure of the complex of rat neonatal Fc receptor with Fc" <u>Nature</u> 372(6504):379-383 (Nov 24, 1994)

Examiner

David A. Seaman

Date Considered

6/7/04

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449

U.S. Dept. of Commerce
Patent and Trademark Office

Atty Docket No.

P1726R1P1

Serial No.

09/713,025

LIST OF DISCLOSURES CITED BY APPLICANT

(Use several sheets if necessary)

Applicant

Presta, L.

Filing Date

15 Nov 2000

Group

053

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

- 27 Burton and Woof, "Human Antibody Effector Function" Advances in Immunology 51:1-84 (1992)
- 28 Burton et al., "Molecular recognition of antibody (IgG) by cellular Fc receptor (FcRI)" Molecular Immunology 25(11):1175-1181 (1988)
- 29 Burton et al., "The Clq receptor site on immunoglobulin G" Nature 288(5789):338-344 (Nov 27, 1980)
- 30 Burton, D.R., "Immunoglobulin G: Functional Sites" Molecular Immunology 22(3):161-206 (1985)
- 31 Canfield and Morrison, "The binding affinity of human IgG for its high affinity Fc receptor is determined by multiple amino acids in the C_{H2} domain and is modulated by the hinge region" Journal of Experimental Medicine 173(6):1483-1491 (Jun 1, 1991)
- 32 Capel et al., "Heterogeneity of Human IgG Fc Receptors" Immunomethods 4:25-34 (1994)
- 33 Capon et al., "Designing CD4 Immunoadhesins for AIDS Therapy" Nature 337:525-531 (February 9, 1989)
- 34 Carter et al., "Humanization of an anti-p185HER2 antibody for human cancer therapy" Proc. Natl. Acad. Sci. USA 89:4285-4289 (1992)
- 35 Chappel et al., "Identification of Secondary FcγRI Binding Site within a Genetically Engineered Human IgG Antibody" Journal of Biological Chemistry 268:25124-25131 (1993)
- 36 Chappel et al., "Identification of the Fcγ receptor class I binding site in human IgG through the use of recombinant IgG1/IgG2 hybrid and point-mutated antibodies" Proc. Natl. Acad. Sci. USA 88(20):9036-9040 (Oct 15, 1991)
- 37 Clynes and Ravetch, "Cytotoxic antibodies trigger inflammation through Fc receptors" Immunity 3(1):21-26 (Jul 1995)
- 38 Clynes et al., "Fc receptors are required in passive and active immunity to melanoma" Proc. Natl. Acad. Sci. USA 95(2):652-656 (Jan 20, 1998)
- 39 Clynes et al., "Modulation of immune complex-induced inflammation in vivo by the coordinate expression of activation and inhibitory Fc receptors" Journal of Experimental Medicine 189(1):179-185 (Jan 4, 1999)
- 40 Clynes et al., "Uncoupling of immune complex formation and kidney damage in autoimmune glomerulonephritis" Science 279(5353):1052-1054 (Feb 13, 1998)
- 41 Cosimi, A.B., "Clinical Development of ORTHOCLONE OKT3" Transplantation Proceedings (Suppl 1) XIX(2):7-16 (Apr 1987)
- 42 Daeron, M., "Fc Receptor Biology" Annual Review of Immunology 15:203-234 (1997)
- 43 de Haas et al., "Fcγ receptors of phagocytes" J. of Laboratory Clinical Medicine 126:330-341 (1995)
- 44 Deisenhofer, J., "Crystallographic Refinement and Atomic Models of a Human Fc fragment and Its Complex with Fragment B of Protein A from Staphylococcus aureus at 2.9- and 2.8-Å Resolution" Biochemistry 20(9):2361-2370 (1981)
- 45 Duncan and Winter, "The binding site for Clq on IgG" Nature 332:736-740 (Apr 21, 1988)
- 46 Duncan et al., "Localization of the binding site for the human high-affinity Fc receptor on IgG" Nature 332:563-564 (April 7, 1988)

Examiner

David A. Saunders

Date Considered

6/7/04

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P1726R1P1

Serial No.

09/717,745

Applicant

Presta, L.

Filing Date

15 Nov 2000

Group

1653

LIST OF DISCLOSURES CITED BY APPLICANT

(Use several sheets if necessary)

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

- 47 Gazzano-Santoro et al., "A non-radioactive complement-dependent cytotoxicity assay for anti-CD20 monoclonal antibody" Journal of Immunological Methods 202:163-171 (1997)
- 48 Gergely et al., "Fc receptors on lymphocytes and K cells" Biochemical Society Transactions 12(5):739-743 (Oct 1984)
- 49 Ghebreniwet et al., "Isolation, cDNA cloning, and overexpression of a 33-kD cell surface glycoprotein that binds to the globular "heads" of Clq" Journal of Experimental Medicine 179(6):1809-1821 (Jun 1, 1994)
- 50 Ghetie and Ward, "FcRn: the MHC class I-related receptor that is more than an IgG transporter" Immunology Today 18(12):592-593 (Dec 1997)
- 51 Ghetie et al., "Abnormally short serum half lives of IgG in β 2-microglobulin-deficient mice" European Journal of Immunology 26(3):690-696 (Mar 1996)
- 52 Ghetie et al., "Increasing the serum persistence of an IgG fragment by random mutagenesis" Nature Biotechnology 15(7):637-640 (Jul 1997)
- 53 Gorman et al., "Transient Production of Proteins Using an Adenovirus Transformed Cell Line" DNA Prot. Eng. Tech. 2(1):3-10 (1990)
- 54 Graham et al., "Characteristics of a Human Cell Line Transformed by DNA from Human Adenovirus Type 5" J. Gen. Virol. 36:59-74 (1977)
- 55 Greenwood et al., "Engineering multiple-domain forms of the therapeutic antibody CAMPATH-1H: effects on complement lysis" Therapeutic Immunology 1(5):247-255 (Oct 1994)
- 56 Greenwood et al., "Structural motifs involved in human IgG antibody effector functions" European Journal of Immunology 23(5):1098-1104 (May 1993)
- 57 Guddat et al., "Three-dimensional structure of a human immunoglobulin with a hinge deletion" PNAS (USA) 90:4271-4275 (1993)
- 58 Haagen et al., "Interaction of Human Monocyte Fc γ Receptors with Rat IgG2b: A New Indicator for the Fc γ RIIa (R H131) Polymorphism" J. Immunol. 154:1852-1860 (1995)
- 59 Hadley et al., "The functional activity of Fc γ RII and Fc γ RIII on subsets of human lymphocytes" Immunology 75(3):446-451 (Jul 1992)
- 60 Harris et al., "Crystallographic Structure of an Intact IgG1 Monoclonal Antibody" Journal of Molecular Biology 275:361-372 (1998)
- 61 Harris et al., "Refined Structure of an Intact IgG2a Monoclonal Antibody" Biochemistry 36:1581-1597 (1997)
- 62 Hatta et al., "Association of Fc γ receptor IIIB, but not of Fc γ receptor IIA and IIIB, polymorphisms with systemic lupus erythematosus in Japanese" Genes and Immunity 1:53-60 (1999)
- 63 Heiken et al., "T lymphocyte development in the absence of Fc ϵ receptor γ subunit: analysis of thymic-dependent and independent $\alpha\beta$ and $\gamma\delta$ pathways" European Journal of Immunology 26(8):1935-1943 (Aug 1996)
- 64 Henry et al., "Participation of the N-terminal region of Cc3 in the binding of human IgE to its high-affinity receptor Fc ϵ RI" Biochemistry 36:15568-15578 (1997)
- 65 Hogarth et al., "Characterization of Fc ϵ Ig-binding sites and epitope mapping" Immunomethods 4(1):17-24 (Feb 1994)
- 66 Huizinga et al., "Binding Characteristics of Dimeric IgG Subclass Complexes to Human Neutrophils" Journal of Immunology 142:2359-2364 (1989)

Examiner

David A. Saunders

Date Considered

6/7/04

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LIST OF DISCLOSURES CITED BY APPLICANT

(Use several sheets if necessary)

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

- 67 Hulett et al., "Chimeric Fc Receptors Identify Functional Domains of the Murine High Affinity Receptors for IgG" J. Immunol. 147:1861-1868 (1991)
- 68 Jaakkola et al., "In vivo detection of vascular adhesion protein-1 in experimental inflammation" American Journal of Pathology 157(2):463-471 (Aug 2000)
- 69 Jareway et al. Immunobiology. The Immune System in Health and Disease, CB Ltd and Garland Publishing Inc., NY & London (1994), PA 6-ES 3,29-3,30.
- 70 Jefferis et al., "Molecular Definition of Interaction Sites on Human IgG for Fc Receptors (huFcγR)" Molecular Immunology 27(12):1237-1240 (1993)
- ~~71 Kabat Sequences of Proteins of Immunological Interest, US Dept. of Health and Human Services, NIH, 5th edition, Bethesda, MD (1991)~~
- 72 Kabat, E. et al. Sequences of Proteins of Immunological Interest (pgs. 569, 671, 687, 695), 5th edition, Bethesda, MD:NIH Vol. 1 (1991)
- 73 Kim et al., "Catabolism of the Murine IgG1 Molecule Evidence That Both CH2-CH3 Domain Interfaces are Required for Persistence of IgG1 in the Circulation of Mice" Scandinavian Journal of Immunology 40(4):457-465 (1994)
- 74 Kim et al., "Identifying amino acid residues that influence plasma clearance of murine IgG1 fragments by site-directed mutagenesis" European Journal of Immunology 24:542-548 (1994)
- 75 Kim et al., "Inhibition of Vascular Endothelial Growth Factor-Induced Angiogenesis Suppresses Tumour Growth in vivo" Nature 362:841-844 (1993)
- 76 Kim et al., "Localization of the site of the murine IgG1 molecule that is involved in binding to the murine intestinal Fc receptor" European Journal of Immunology 24:2429-2434 (1994)
- 77 Kim et al., "The Vascular Endothelial Growth Factor Proteins: Identification of Biologically Relevant Regions by Neutralizing Monoclonal Antibodies" Growth Factors 7(1):53-64 (1992)
- 78 Koene et al., "FcγRIIIa-158V/F Polymorphism Influences the Binding of the IgG by Natural Killer Cell FcγRIIIa, Independently of the FcγRIIIa-48L/R/H Phenotype" Blood 90(3):1109-1114 (1997)
- 79 Funkel, T., "Rapid and Efficient Site-Specific Mutagenesis Without Phenotypic Selection" Proc. Natl. Acad. Sci. 82:488-492 (1985)
- 80 Lauvrak et al., "Identification and characterisation of Clq-binding phage displayed peptides" Biological Chemistry 378(12):1509-1519 (Dec 1997)
- 81 Lehrnbecher et al., "Variant genotypes of FcγRIIIA influence the development of Kaposi's sarcoma in HIV-infected men" Blood 95(7):2386-2390 (2000)
- 82 Lehrnbecher et al., "Variant genotypes of the low-affinity Fcγ receptors in two control populations and a review of low-affinity Fcγ receptor polymorphisms in control and disease populations" Blood 94(12):4220-4232 (Dec 15, 1999)
- 83 Li et al., "Reconstitution of human FcγRIII cell type specificity in transgenic mice" Journal of Experimental Medicine 183(3):1259-1263 (Mar 1, 1996)
- 84 Lively et al., "Glycosylation and biological activity of CAMPATH-1H expressed in different cell lines and grown under different culture conditions" Glycobiology 5(8):811-822 (Dec 1995)
- 85 Lorenz et al., "Strong association between the responder status of the FcγII receptor and recurrent spontaneous abortion" European Journal of Immunogenetics 22(5):397-401 (Oct 1995)
- 86 Lucas et al., "High-level production of recombinant proteins in CHO cells using a dicistronic DHFR intron expression vector" Nucleic Acids Research 24(9):1774-1779 (1996)

Examiner

Dana A. Saunders

Date Considered

6/7/04

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FORM PTO-144

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Patent and Trademark Office

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P1726R1P1

Sheet 5 of 8

Serial No.

09/7/99, 425

Applicant

Presta, L.

Filing Date

15 Nov 2003

Group

165

LIST OF DISCLOSURES CITED BY APPLICANT

(Use several sheets if necessary)

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

- 87 Lund et al., "Human FcγRI and FcγRII interact with distinct but overlapping sites on human IgG" Journal of Immunology 147(8):2657-2662 (Oct 15, 1991)
- 88 Lund et al., "Multiple binding sites on the CH2 domain of IgG for mouse FcγRII" Molecular Immunology 29(1):53-59 (Jan 1992)
- 89 Lund et al., "Multiple Interactions of the IgG with Its Core Oligosaccharide Can Modulate Recognition by Complement and Human Fcγ Receptor I and Influence the Synthesis of Its Oligosaccharide Chains" J. Immunol. 157:4963-4969 (1996)
- 90 Lund et al., "Oligosaccharide-protein interactions in IgG can modulate recognition by Fcγ receptors" FASEB Journal 9:115-119 (1995)
- 91 Medesan et al., "Comparative studies of rat IgG to further delineate the Fc:FcRn interaction site" European Journal of Immunology 28:2092-2100 (1998)
- 92 Medesan et al., "Delineation of the amino acid residues involved in transcytosis and catabolism of mouse IgG1" Journal of Immunology 158(5):2211-2217 (Mar 1, 1997)
- 93 Medesan et al., "Localization of the site of the IgG molecule that regulates maternal-fetal transmission in mice" European Journal of Immunology 26(10):2533-2536 (Oct 1996)
- 94 Meng et al., "Green fluorescent protein as a second selectable marker for selection of high producing clones from transfected CHO cells" Gene 242:201-207 (2000)
- 95 Miller et al., "A Novel Role for the Fc Receptor γ Subunit: Enhancement of the FcγR Ligand Affinity" Journal of Experimental Medicine 183:2227-2233 (1996)
- 96 Morgan et al., "The N-terminal end of the CH2 domain of chimeric human IgG1 anti-HLA-DR is necessary for C1q, FcγRI and FcγRIII binding" Immunology 86(2):319-324 (Oct 1995)
- 97 Morrison et al., "Structural Determinants of Human IgG Function" Immunologist 2:119-124 (1994)
- 98 Nagarajan et al., "Ligand binding and phagocytosis by CD16 (Fc γ receptor III) isoforms. Phagocytic signaling by associated ζ and γ subunits in Chinese hamster ovary cells" Journal of Biological Chemistry 270(43):25762-25770 (Oct 27, 1995)
- 99 Ngo et al., "Computational Complexity, Protein Structure Prediction, and the Levinthal Paradox" The Protein Folding Problem and Tertiary Structure Prediction, Merz & Le Grand, Boston: Birkhauser pps. 491-495 (1994)
- 100 Nieto et al., "Involvement of the Fcγ receptor IIIA genotypes in susceptibility to rheumatoid arthritis" Arthritis and Rheumatism 43(4):735-739 (2000)
- 101 Okada et al., "Cutting Edge: Role of the inositol phosphatase SHIP in B cell receptor-induced Ca²⁺ oscillatory response" Journal of Immunology 161(10):5129-5132 (Nov 15, 1998)
- 102 Ono et al., "Deletion of SHIP or SHP-1 reveals two distinct pathways for inhibitory signaling" Cell 90(2):293-301 (Jul 25, 1997)
- 103 Ono et al., "Role of the inositol phosphatase SHIP in negative regulation of the immune system by the receptor FcγRIIB" Nature 383(6597):263-266 (Sep 19, 1996)
- 104 Papac et al., "A high-throughput microscale method to release N-linked oligosaccharide from glycoproteins for matrix-assisted laser desorption/ionization time-of-flight mass spectrometric analysis" Glycobiology 6(5):445-454 (1998)
- 105 Papac et al., "Analysis of Acidic Oligosaccharides and Glycopeptides by Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry" Anal. Chem. 68:3215-3223 (1996)
- 106 Popov et al., "The stoichiometry and affinity of the interaction of murine Fc fragments with the MHC class I-related receptor, FcRn" Molecular Immunology 33(6):521-530 (Apr 1996)

Examiner

Daniel Sumner

Date Considered

6/7/04

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Sheet 6 of 2

Serial No.

09/7/93 125

LIST OF DISCLOSURES CITED BY APPLICANT

(Use several sheets if necessary)

Applicant

Presta, L.

Filing Date

15 Nov 2000

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

107	Porges et al., "Novel Fcγ Receptor I Family Gene Products in Human Mononuclear Cells" <u>J. Clin. Invest.</u> 90:2102-2109 (1992)
108	Presta et al., "Humanization of an Anti-Vascular Endothelial Growth Factor Monoclonal Antibody for the Therapy of Solid Tumors and Other Disorders" <u>Cancer Research</u> 57(20):4593-4599 (Oct 15, 1997)
109	Raghavan and Bjorkman, "Fc Receptors and their Interactions with Immunoglobulins" <u>Annu. Rev. Cell. Dev. Biol.</u> 12:181-220 (1996)
110	Raghavan et al., "Analysis of the pH dependence of the neonatal Fc receptor/immunoglobulin G interaction using antibody and receptor variants" <u>Biochemistry</u> 34(45):14649-14657 (Nov 14, 1995)
111	Favetch and Clynes, "Divergent roles for Fc receptors and complement in vivo" <u>Annual Review of Immunology</u> 16:421-432 (1998)
112	Favetch and Kinet, "Fc Receptors" <u>Annual Review of Immunology</u> 9:457-492 (1991)
113	Favetch, J., "Fc receptors" <u>Current Opinion in Immunology</u> 9(1):121-125 (Feb 1997)
114	Favetch, J., "Fc receptors: rubor redux" <u>Cell</u> 78(4):553-560 (Aug 26, 1994)
115	Reff et al., "Depletion of B cells in vivo by a chimeric mouse human monoclonal antibody to CD20" <u>Blood</u> 83(2):435-445 (Jan 15, 1994)
116	Sarmay et al., "Ligand inhibition studies on the role of Fc receptors in antibody-dependent cell-mediated cytotoxicity" <u>Molecular Immunology</u> 21(1):43-51 (Jan 1984)
117	Sarmay et al., "Mapping and comparison of the interaction sites on the Fc region of IgG responsible for triggering antibody dependent cellular cytotoxicity (ADCC) through different types of human Fcγ receptor" <u>Molecular Immunology</u> 29(5):633-639 (May 1992)
118	Sensel et al., "Amino acid differences in the N-terminus of Cγ2 influence the relative abilities of IgG2 and IgG3 to activate complement" <u>Molecular Immunology</u> 34(14):1019-1029 (Oct 1997)
119	Shores et al., "T cell development in mice lacking all T cell receptor ζ family members (ζ, η, and FcεRIγ)" <u>Journal of Experimental Medicine</u> 187(7):1093-1101 (Apr 6, 1998)
120	Sondermann et al., "Crystal structure of the soluble form of the human Fcγ-receptor IIb: a new member of the immunoglobulin superfamily at 1.7 Å resolution" <u>EMBO Journal</u> 18(5):1095-1103 (1999)
121	Sondermann et al., "The 32-A crystal structure of the human IgG1 Fc Fragment-FcγRIII complex" <u>Nature</u> 406:267-273 (2000)
122	Strohmeier et al., "Neutrophil functional responses depend on immune complex valency" <u>Journal of Leukocyte Biology</u> 58(4):403-414 (Oct 1995)
123	Strohmeier et al., "Role of the FcγR subclasses FcγRII and FcγRIII in the activation of human neutrophils by low and high valency immune complexes" <u>Journal of Leukocyte Biology</u> 58(4):415-422 (Oct 1995)
124	Suzuki et al., "Distinct contribution of Fc receptors and angiotensin II-dependent pathways in anti-GBM glomerulonephritis" <u>Kidney International</u> 54(4):1166-1174 (Oct 1998)
125	Sylvestre and Favetch, "A dominant role for mast cell Fc receptors in the Arthus reaction" <u>Immunity</u> 5(4):387-390 (Oct 1996)
126	Sylvestre and Favetch, "Fc receptors initiate the Arthus reaction: redefining the inflammatory cascade" <u>Science</u> 265(5175):1095-1098 (Aug 19, 1994)

Examiner

David A. Saunders

Date Considered

6/7/04

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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P1726R1P

Serial No.

097713.425

LIST OF DISCLOSURES CLAIMED BY APPLICANT

(Use several sheets if necessary)

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

- 127 Sylvestre et al., "Immunoglobulin G-mediated inflammatory responses develop normally in complement-deficient mice" Journal of Experimental Medicine 184(6):2385-2392 (Dec 1, 1996)
- 128 Takai et al., "Augmented humoral and anaphylactic responses in FcγII-deficient mice" Nature 379(6563):346-349 (Jan 25, 1996)
- 129 Takai et al., "FcR γ chain deletion results in pleiotrophic effector cell defects" Cell 76(3):519-529 (Feb 11, 1994)
- 130 Camm et al., "The IgG binding site of human FcγRIIB receptor involves CC' and FG loops of the membrane-proximal domain" Journal of Biological Chemistry 271(7):3659-3666 (Feb 16, 1996)
- 131 Tao et al., "Structural features of human immunoglobulin G that determine isotype-specific differences in complement activation" Journal of Experimental Medicine 178(2):661-667 (Aug 1, 1993)
- 132 Tao et al., "Studies of aglycosylated chimeric mouse-human IgG. Role of Carbohydrate in the Structure and Effector Functions Mediated by the Human IgG Constant Region" Journal of Immunology 143(8):2595-2601 (Oct 15, 1989)
- 133 Tao et al., "The differential ability of human IgG1 and IgG4 to activate complement is determined by the COOH-terminal sequence of the C_H2 domain" Journal of Experimental Medicine 173(4):1025-1028 (Apr 1991)
- 134 Tax et al., "Fc receptors for mouse IgG₁ on human monocytes: polymorphism and role in antibody-induced T cell proliferation" Journal of Immunology 133(3):1185-1189 (Sep 1984)
- 135 Ting et al., "Fcγ receptor activation induces the tyrosine phosphorylation of both phospholipase C (PLC)-γ1 and PLC-γ2 in natural killer cells" Journal of Experimental Medicine 176(6):1751-1755 (Dec 1, 1992)
- 136 Umara et al., "Engineered glycoforms of an antineuroblastoma IgG1 with optimized antibody-dependent cellular cytotoxic activity" Nature Biotechnology 17:176-180 (1999)
- 137 Urfer et al., "High resolution mapping of the binding site of TrkA for nerve growth factor and TrkB for neurotrophin-3 on the second immunoglobulin-like domain of the Trk receptors" Journal of Biological Chemistry 273(10):5829-5840 (Mar 6, 1998)
- 138 Van de Winkel and Anderson, "Biology of human immunoglobulin G Fc receptors" Journal of Leukocyte Biology 49(5):511-524 (May 1991)
- 139 Vance et al., "Binding of monomeric human IgG defines an expression polymorphism of FcγRIII on large granular lymphocyte/natural killer cells" Journal of Immunology 151(11):6429-6439 (Dec 1, 1993)
- 140 Ward and Ghetie, "The effector functions of immunoglobulins: implications for therapy" Therapeutic Immunology 2(2):77-94 (1995)
- 141 Warmerdam et al., "A single amino acid in the second Ig-like domain of the human Fcγ receptor II is critical for human IgG2 binding" Journal of Immunology 147(4):1338-1343 (Aug 15, 1991)
- 142 Weng et al., "Computational determination of the structure of rat Fc bound to the neonatal Fc receptor" Journal of Molecular Biology 282(2):217-225 (Sep 18, 1998)
- 143 Werther et al., "Humanization of an Anti-Lymphocyte Function-Associated Antigen (LFA)-1 Monoclonal Antibody and Reengineering of the Humanized Antibody for Binding to Rhesus LFA-1" J. of Immunology 157:4986-4995 (1996)
- 144 Woolf et al., "Localisation of the monocyte-binding region on human immunoglobulin G" Molecular Immunology 23(3):319-330 (Mar 1986)
- 145 Wright and Morrison, "Effect of altered C_H2-associated carbohydrate structure on the functional properties and in vivo fate of chimeric mouse-human immunoglobulin G1" Journal of Experimental Medicine 180(3):1087-1096 (Sep 1, 1994)
- 146 Wu et al., "A novel polymorphism of FcγRIIIa (CD16) alters receptor function and predisposes to autoimmune disease" Journal of Clinical Investigation 100(5):1059-1070 (Sep 1, 1997)

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Daria Suarez

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P1726R01

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Serial No.

09713,425

LIST OF DISCLOSURES CITED BY APPLICANT

(Use several sheets if necessary)

Applicant

Presta, L

Filing Date

15 Nov 2000

Group

653

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, etc.)

- 147 Xu et al., "The N-terminal sequence of the CH2 domain controls the differential ability of human IgG1 and IgG2 to activate complement" Journal of Immunology (abstract no. 862) 150(8):152A (Apr 15, 1993)
- 148 Yap et al., "Human Fc gamma receptor IIA (FcγRIIA) genotyping and association with systemic lupus erythematosus (SLE) in Chinese and Malays in Malaysia" Lupus 8(4):305-310 (1999)
- 149 Yuan et al., "Antibody-mediated modulation of Cryptococcus neoformans infection is dependent on distinct Fc receptor functions and IgG subclasses" Journal of Experimental Medicine 187(4):641-648 (Feb 16, 1998)

Examiner

Daria A. Saunders

Date Considered

6/7/04

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U.S. PATENT DOCUMENTS

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<i>Jelly</i>	159 6,538,124	25.03.03	Idusogie et al.			

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